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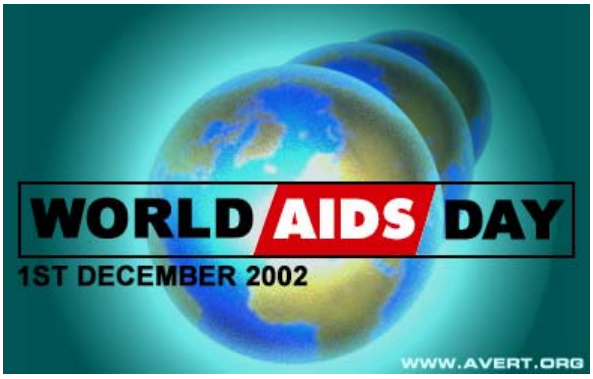
Stigma and Discrimination: Are you HIV prejudiced?



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World AIDS Day is celebrated worldwide on December 1st each year and has a special place in the history of the AIDS pandemic. Since 1988, December 1st has been a day bringing messages of compassion, hope, solidarity and understanding about AIDS to every country in the world. World AIDS Day emerged from the call by the World Summit of Ministers of Health on Programmes for AIDS Prevention in January 1988 to open channels of communication, strengthen the exchange of information and experience, and forge a spirit of social tolerance. Since then, World AIDS Day has received the support of the World Health Assembly, the United Nations system, and governments, communities and individuals around the world. Each year, it is the only international day of coordinated action against AIDS.

Even though it is still called **"World AIDS Day"**, it focuses on both HIV infection and its most life threatening stage, AIDS. HIV is a retrovirus that replicates and destroys the immune system defenses of those infected. When the immune system is sufficiently compromised, opportunistic infections occur, which can cause severe illness, incapacitation, and even death.

History of HIV and AIDS (HIV disease)

For a disease, HIV disease has had a short history but worldwide impact. The first report of AIDS was 21 years ago. At that time the epidemic was largely among men who have

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sex with other men. The causative virus was identified in 1984. By 1985, testing was available for the nation's blood supply, Rock Hudson died of AIDS, and Ryan White started his fight to attend school even though he was infected with the virus. Most diagnoses were made after the immune system was devastated. Death was the natural outcome within a couple of years.

By 1987 AZT was available for treatment and prolonged life. In 1995 pregnant women began taking AZT to reduce the incidence of vertical transmission from mother to child from 25-30% to 2-4% today. In 1996 Highly Active Antiretroviral Therapy (HAART) became available. This, along with other treatments and treatment plans, has prolonged life and the quality of life. Meanwhile, the disease has spread to include the entire world. The treatments are not available to most of those infected due to infrastructure, logistics, medical care, or cost. Treatment and death are related worldwide: the more treatment the less death. In 1999 vaccine trials began. In 2002 there is still no cure. There is only prevention.

HIV disease impacts most areas of life in households and in counties. It impacts family income, life expectancy of the head of the household, mothers and wage earners. It takes a toll on educators and education, health care providers and the health care system in quality and quantity, and economic enterprises by weakening economic activity and production.

The Red Ribbon is an international symbol of AIDS awareness that is worn by people all year round and particularly around World AIDS Day to demonstrate care and concern about HIV disease and to remind others of the need for their support and commitment. The red ribbon started as a "grass roots" effort, and as a result there is no official red ribbon, and many people make their own.

Worldwide AIDS

Worldwide there are approximately 40 million people living with HIV disease: 37.1 million adults, 3 million children under 15 years of age, and 18.5 million women. More than 5 million were infected in 2001, and 2 million were women. More than 60 million have been infected thus far, and there are more than 14,000 people newly infected with HIV every day. More than 3 million died with AIDS in 2001 and more than 21.8 million have died worldwide. There have been 14 million children orphaned due to the parents dying with HIV disease.

The world's poorest countries host 95% of the world's AIDS cases. In sub-Saharan Africa alone there are 28 million people living with HIV disease. In several southern African countries 1 in 5 adults is infected with HIV. In Botswana nearly 40% of the adults were infected by 2001.

Africa has always been the most impacted by the disease, but today Eurasia is facing a massive epidemic. Eurasia has 5 of every 8 of the world population and an unfolding epidemic, with 7 million infected with HIV by 2001. It took less than 10 years for sub-Saharan Africa cases to increase from 7 million to 25 million. Especially hard hit are Russia, India, and China.

The most frequent mode of transmission in the world in now heterosexual contact. The most frequent mode in the United States is still men who have sex with men (MSM), but heterosexual transmission is gaining. Even though there is no treatment, there are prevention techniques, the most common ones being sexual abstinence, monogamous sexual relationships with non-HIV infected partners, using condoms with every sexual encounter, not sharing needles, and using clean needles for injecting drugs.

United States AIDS and HIV

At of the end of 2001, 816,149 people had been diagnosed with AIDS in the United States and reported to the Centers for Disease Control and Prevention (CDC). Since HAART became widespread during 1996, trends in AIDS incidence have become less reflective of underlying trends in HIV transmission. To better monitor patterns of HIV diagnosis, most states (35) have implemented HIV surveillance, but some are quite recent and not valid at this time. Indiana began HIV surveillance in the late 1980s.

There are 35 states that report HIV infections (all stages prior to AIDS). There have been 174,026 reported with HIV infection and 35,575 reported in 2001. For reporting of HIV and AIDS, American Samoa, Guam, Mariana Islands, and Virgin Islands are included because they also report to the CDC.

The first cases of what is now known as AIDS were reported in the United States in June 1981. In the 1980's, there were rapid increases in the number of AIDS cases and deaths of people with AIDS. Cases peaked with the 1993 expansion of the case definition and then declined until 2001. The most dramatic declines in cases and deaths have occurred since 1996 with the widespread use of antiretroviral therapy. Persons with AIDS are surviving longer and are contributing to steady increases in the number of people living with AIDS.

During the 1990s, the epidemic shifted steadily toward a growing proportion of AIDS cases in blacks and Hispanics and in women, and toward a decreasing proportion in MSM, although this group remains the largest single exposure group. Blacks and Hispanics, among whom AIDS rates have been markedly higher than among whites, have been disproportionately affected since the early years of the epidemic. In absolute numbers, blacks have outnumbered whites in new AIDS diagnoses and deaths since 1996, and in the number of people living with AIDS since 1998.

Whites have outnumbered other races and ethnicities from the beginning with 343,888 or 42% being reported. In 2001 whites constituted 13,237 or 31% of those reported with AIDS. The rate per 100,000 whites was 6.6/100,000. Blacks had historically been the most impacted by AIDS with 313,780 reported or 38%. In 2001 there were 21,031 Blacks reported or 49% and a rate of 59.6/100,000 Blacks. Black females have been 58% of the adult females reported and in 2001 Black females were 63% of all adult females.

Hispanics have also been disproportionately impacted. There have been 149,752 or 18% reported. In 2001 there were 8,209 reported or 19% with a rate of 20.7/100,000 Hispanics. The other races combined have been less than 1% of all reports through the years but contributed 2.5% in 2001.

Cumulative numbers of AIDS cases in the United States show that more men are diagnosed with AIDS than women with 670,687 or 82% being men and 145,461 or 18% being female. In 2001 females had escalated to 26%.

The most frequent mode of transmission or risk factor in the United States is still men who have sex with men. Cumulatively they have contributed 45% of the cases of AIDS. In 2001 this had dropped to 42%, or 13,265 of the 31,901 adult males reported. Heterosexual exposure to an infected person accounts for 90,131 cases or 11% cumulatively, and 6,904 or 16% in 2001. Other modes reported in 2001 were injecting drug use, 7,473 or 17%; men who have sex with men and inject drugs, 1,502 or 3%; hemophilia or a coagulation disorder, 106 or less than 1%; a blood transfusion or a tissue transplant, 218 or 1%; and those that have not identified their risk factor was 13,515 or 31%.

The age groups most frequently diagnosed have been the 30-49 year old with 578,408 or 51% of the diagnoses. There have been 133,725 or 16% that were 20-29. Those that have been diagnosed with the most severe stage of HIV disease, AIDS, while in their 20s were probably infected in their teenage years. Youth, ages 13-19, have been diagnosed 4,428 times or 1% of all reports. Cumulatively there have been 90,513 adults over 50 years of age reported or 11% of all reports.

It is estimated by CDC that there are 362,827 people living with AIDS. There have been 344,178 people reported as living with AIDS plus another 162,976 living with HIV infection.

There have been 462,653 deaths of adults with AIDS plus 5,257 children.

Indiana AIDS

A complete breakdown of HIV and AIDS data is available by selecting quarterly reports and then October 2002 at http://www.in.gov/isdh/programs/hivstd/index.htm.

During the first 6 months of 2002 there was an unusual number of HIV disease cases reported in Indiana. The increase was more than 40% over the expected with level reporting. This does not necessarily indicate an increase in the diagnoses or incidence of HIV infection or AIDS diagnoses. The increase is currently attributed to delayed reporting by several health care providers and health care institutions. It is not known at this time if there is an actual increase in the incidence of HIV disease in Indiana. The populations that appear to be effected are whites, males, white males, Hispanics, females, men who have sex with men, and those of a younger age. With this bubble it is difficult to describe any trends.

As of September 30, 2002, there have been 6,825 Hoosiers reported with AIDS. Cumulative AIDS numbers have increased at about the same rate as the U.S. numbers but with different distribution among the populations. The Indiana males remain dominant with 6,049 or 89% of all reports of AIDS. In 2001 males had decreased to 77%. In the first 6 months of 2002 males accounted for 83% of the reports. The cumulative number of females is 776 or 11%. The increase in the percentage of males has consequently lowered the percentage of females from 23% in 2001 to 17% in the first 6 months of 2002.

Whites, non-Hispanic, continue to be the most frequently reported race or ethnicity with a cumulative total of 4,756 or 70%. In 2001 whites accounted for 54% of reports of AIDS and in the first 6 months of 2002 whites accounted for 59%. The rate of reports for 2001 was 2.6/100,000.

Blacks, non-Hispanic, continue to be disproportionately represented. Blacks report 1,817 of all reports of AIDS. In 2001 Blacks accounted for 38% of reports of AIDS and 33% in the first 6 months of 2002. Blacks represent 8.2% of the population of Indiana. The rate of reports for 2001 was 19.0/100,000 Blacks.

Hispanics, all races, also are disproportionately represented. Hispanics represent about 3.5% of the population of Indiana and 232 reports of AIDS, or 3% cumulatively. In 2001 and the first 6 months of 2002 the percentage had risen to 7%. The rate of reports for 2001 was 8.4/100,000 Hispanics. The other races and ethnicities represent less than 1% of the AIDS, but in 2001 they represented 1.2%.

The most frequent mode of transmission or risk factor in Indiana is still men who have sex with men. Cumulatively they represent 62% or 4,204 cases. In 2001 they represented 40% of cases, and in the first 6 months of 2002 that number increased to 45%. This is slightly higher than for the U.S.

Percentage distribution is difficult to compare because nationally in 2001, 31% of the reports of AIDS did not include a risk factor. This affects the percentage of all other factors. In Indiana the rate was 25%. This represents a large number of people who cannot or will not disclose the mode of transmission of the virus. Without this disclosure it is more difficult to provide effective prevention assistance. Without effective prevention intervention there will be further transmission of the virus to other people.

Cumulative reports through September 2002 followed by 2001 reports by mode of transmission are men who have sex with men and inject drugs, 467 (7%) and 11 (4.3%); heterosexuals who inject drugs, 714 (10%) and 17 (7%); hemophilia or coagulation disorders, 79 (1%) and 2 (less than 1%); heterosexual contact with an infected person, 662 (10%) and 42 (16%); blood transfusions or tissue transplants, 106 (2%) and 3 (1.2%).

The age groups most frequently diagnosed have been 30-49 year olds with 4,770 or 70%. This is a larger percentage than in the U.S. There have been 1,318 (19%) diagnosed in the 20-29 year age group and 46 (1%) in the adolescent years of 13-19. Adults over 50 have been diagnosed with AIDS 638 times, or 9% of the total for Indiana. The age groups did not change significantly in 2001 reports except for those over 50 that climbed to 13% with 32 people being diagnosed.

At the end of June 2002 there were 3,368 people living with AIDS in Indiana. There were an additional 3,668 people living with HIV infection. There were also 288 children who were born to HIV infected mothers and have either been determined not to be infected or it has not yet been determined.

Indiana HIV Infection (HIV)

The Indiana males remain dominant with 3,135 or 80% of all reports of HIV. In 2001 males had decreased to 74%. In the first 6 months of 2002 males again accounted for 80% of the reports. The cumulative number of females is 766 or 20%. The increase in the percentage of males has consequently lowered the percentage of females from 26% in 2001 to 20% in the first 6 months of 2002.

Whites, non-Hispanic, continue to be the most frequently reported race or ethnicity with a cumulative total of 2,319 or 60%. In 2001 Whites accounted for 54% of reports of HIV and in the first 6 months of 2002 Whites accounted for 55%. The rate of reports for 2001 was 3.7/100,000.

Blacks, non-Hispanic, continue to be disproportionately represented. Blacks report 1,394 of all reports of HIV or 36%. In 2001 Blacks accounted for 39% of reports of HIV and 37% in the first 6 months of 2002. Blacks represent 8.2% of the population of Indiana. The rate of reports for 2001 was 28.0/100,000 Blacks.

Hispanics, all races, also are disproportionately represented. Hispanics represent about 3.5% of the population of Indiana and 163 reports of HIV, or 4% cumulatively. In 2001 the percentage had risen to 6% and in the first 6 months of 2002 it was 5%. The rate of reports for 2001 was 9.8/100,000 Hispanics.

The other races and ethnicities represent less than 1% of the HIV, but in 2001 they represented 1.2% and in the first 6 months of 2002 it has risen to 2.2%.

The most frequent mode of transmission or risk factor in Indiana is still men who have sex with men. Cumulatively they represent 60% or 1,878 cases. In 2001 this accounted for 44% of cases, and in the first 6 months of 2002 that number increased to 50%. It is unclear if this is an actual increase. There have been reports of increases in men who have sex with men in other parts of the U.S.

Cumulative reports through September 2002 followed by 2001 reports by mode of transmission are: men who have sex with men and inject drugs, 184 (6%) and 15 (4%); heterosexuals who inject drugs, 386 (12%) and 19 (5.2%); hemophilia or coagulation disorders, 21 (1%) and none; heterosexual contact with an infected person, 608 (19%) and 81 (22%); blood transfusions or tissue transplants, 25 (1%) and 1 (less than 1%).

The age groups most frequently diagnosed through September 2002 have been the 30-49 year olds with 2,095 or 53%. There have been 1,435 (37%) diagnosed in the 20-29 year age group and 150 (4%) in the adolescent years of 13-19. Adults over 50 have been diagnosed with HIV 177 times or 5% of the total for Indiana. Several age groups with HIV are changing proportionately. In 2001 they were 58% in the 30-49 age group that is up from 53%. The 20-29 age group decreased from 37% to 33% and adolescents decreased from 4% to 2.5% in 2001.

Deaths

In Indiana 3,929 people have died with HIV disease. This is 35.6% of those reported with HIV disease.

Prevalence of HIV disease in Indiana

Each county in Indiana has had a resident diagnosed with HIV disease. The counties with over 100 infected people living in the county as of June 30, 2002 include, in descending order: Marion, Lake, Allen, St. Joseph, Vanderburgh, Vigo, Madison, La Porte, Monroe, Delaware, and Clark.

The following is a table of those living with HIV disease in Indiana by gender, race/ethnicity, and selected modes of transmission.

Table 1. Living with HIV disease in Indiana, January 2002

	Number	Percentage
Gender		
Male	5,828	83
Female	1,208	17
Race/Ethnicity		
White	4,337	62
Black	2,337	33
Hispanic (all races)	320	5
Risk Factor		
Men who have sex with men (MSM)	3,759	53
Injecting drug user (IDU)	728	10
MSM and IDU	384	5
Heterosexual contact with HIV infected person	1,019	14
Not able to identify/report	1,002	14

New Developments

New reports of HIV infection do not necessarily reflect HIV incidence, i.e., new infections. The monitoring of new infections, not new diagnoses, is critical in evaluating progress toward the goal of reducing the number of new HIV infections by half by 2005. One method for estimating HIV incidence is to apply the **Serologic Testing Algorithm for Recent HIV Seroconverions (STARHS)** to serologic specimens from new HIV diagnoses. Indiana has been granted funding to work with other states and CDC to implement STARHS. A detuned assay of serologic specimens can identify infections that are older than about 6 months. If the specimen is not positive for HIV by this method the infection is recent. A timeline for implementation is not set.

In November 2002, the U.S. Food and Drug Administration has approved a **new rapid HIV diagnostic test** kit that provides results with 99.6% accuracy in as little as 20 minutes. It is called The OraQuick Rapid HIV-1 Antibody Test and is manufactured by OraSure Technologies, Inc. It uses less than a drop of blood and quickly and reliably detects antibodies to HIV-1. It can be stored at room temperature, and requires no specialized equipment. A positive screening test result must be confirmed by additional specific approved test. At this time the test is CLIA categorized as moderate and must be performed in CLIA-approved labs by a CLIA-certified laboratory technician or medical staff. OraSure will no doubt apply for a CLIA wavier so that it may be used in more health care settings. It has not been approved for use by blood banks or plasma collection centers. It is not available for home use.

Beginning January 1, 2003 all HIV and AIDS surveillance offices in the United States will begin to **collect race and ethnicity separately**. The categories for race will be American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White. More than one race may be selected. The only ethnicity being collected is Hispanic or Latino. In Indiana additional information is needed to better implement effective and targeted HIV prevention programs and to better serve those infected. Additional information will be collected regarding homelessness, mental illness, sexually transmitted infections, hepatitis, and sex or needle sharing partners.

World AIDS Day Activities

There are numerous World AIDS Day activities around Indiana between now and December 1st. Check the local health department and AIDS Service Organization.

Additional information and resources may be found at:

http://www.avert.org/
http://www.cdc.gov/hiv/stats/hasrlink.htm
http://www.cdc.gov/wad.htm
http://www.in.gov/isdh/programs/hivstd/index.htm
http://www.kff.org/worldaidsday
http://www.unaids.org
http://www.wadindiana.org
http://www.worldaidsday.org

HIV remains a highly stigmatized condition**.** HIV related discrimination occurs worldwide and is widespread. Discrimination affects the quality of life of people with HIV and makes care and prevention efforts more difficult as people are alienated from testing, treatment, and prevention services. This can also lead to people with HIV losing their friends, jobs, families, and homes.

Diabetes: An Alarming Epidemic

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Introduction

Seventeen million people, or 6.2% of the US population, have diabetes. Every day, 2,740 people are diagnosed with diabetes, the fastest increasing chronic disease. In the past 10 years, the number of people with diabetes in this country has increased 80 percent among people in their 30s. Overall, the risk for death among those with diabetes is about twice that of people without diabetes. However, the increased risk associated with diabetes is greater for younger people (3.6 times for people aged 25-44 years versus 1.5 times for those aged 65-74 years), and women (2.7 times for women aged 45-64 years versus 2.0 for men in that age group). Health experts predict that the number of cases will increase dramatically, especially among ethnic and minority populations. Diabetes often goes unrecognized because its symptoms mimic the symptoms of many other conditions.

More than 90% of diabetics who have Type 2 diabetes, (formerly called adult onset or non-insulin dependent), which occurs when the pancreas does not produce enough insulin or does not properly utilize it. Type 2 diabetes has been associated with advanced age, obesity, family history of diabetes, history of gestational diabetes, physical inactivity, and race/ethnicity. Type 2 diabetes is increasingly being diagnosed in children and adolescents.

Type 1 diabetes, (formerly called juvenile onset or insulin-dependent diabetes), occurs when the pancreas does not produce any insulin because the immune system destroys pancreatic beta cells, the only cells in the body that make the insulin hormone. It accounts for 5-10% of all diagnosed cases. Risk factors for type 1 include autoimmune, genetic, and environmental factors.

Complications

- Heart disease is the leading cause of diabetes-related deaths. Adults with diabetes have heart disease death rates about 2 to 4 times higher than adults without diabetes. The risk for stroke is 2 to 4 times higher among people with diabetes. About 73% of adults with diabetes have blood pressure greater than or equal to 130/80 mm HG or use prescription medications for hypertension.

- Diabetes is the leading cause of new cases of blindness among adults 20-74 years old. Diabetes retinopathy causes 12,000 to 24,000 new cases of blindness each year. Diabetes is the leading cause of treated end-stage renal disease, accounting for 43% of new cases. In 1999, 38,160 people with diabetes began treatment for end-stage renal disease.

- Additionally, in 1999, a total of 114,478 people with diabetes underwent dialysis or kidney transplantation. About 60% to 70% of people with diabetes have mild to severe forms of nervous system damage. The results of such damage include impaired sensation of pain in the feet or hands, slowed digestion of food in the stomach, carpal tunnel syndrome, and other nerve problems. Severe forms of diabetic nerve disease are a major contributing cause of lower-extremity amputations. More than 60% of nontraumatic lower-limb amputations in the United States occur among people with diabetes. From 1997 to 1999, about 82,000 nontraumatic lower-limb amputations were performed each year among people with diabetes.

- Periodontal or gum diseases are more common among people with diabetes than among those without diabetes.

- Poorly controlled diabetes before conception and during the first trimester of pregnancy can cause major birth defects in 5% to 10% of pregnancies, and spontaneous abortions in 15% to 20% of pregnancies. Poorly controlled diabetes during the second and third trimesters of pregnancy can result in excessively large babies, posing a risk to the mother and the child.

- People with diabetes are more susceptible to many other illnesses and once they acquire these illnesses, often have a worse prognosis than people without diabetes. For example, they are more likely to die with pneumonia or influenza than people who do not have diabetes.

Indiana Statistics

In Indiana, an estimated 350,000 people, or 6.5% of the adult population, have diabetes. The minority populations in Indiana are at a much higher risk for diabetes and the complications that occur. In the year 2000, diabetes was the 4th leading cause of death for blacks in Indiana, and the 5th leading cause of death among the Hispanic population. The risk of death from diabetes is more than 2 times that of the white population in Indiana for blacks, and approximately 1.9 times that of the white population for Indiana Hispanics.

A survey of African American Marion County residents in 2001 revealed that the symptoms and risk factors of diabetes are not well known. More than 40% could not name one symptom of diabetes. The common risk factors that were stated by more than 61% of that group were heredity and diet. Awareness of risk factors was heavily influenced by contact with the health care system. Those who reported having been tested for diabetes and/or having been told they had "diabetes or high blood sugar" were significantly more aware of risk factors than those who had either not been tested or told they had the disease.

Type 2 diabetes has a strong genetic link but depends more on environmental factors. Type 2 diabetes is found in people who do not make healthy food choices and get very little exercise. More than 58.4% of the Indiana population is overweight or obese leading to the development of Type 2 diabetes. This problem has also increased within the younger population. More young children are being diagnosed with Type 2 diabetes due to a sedentary lifestyle and poor eating habits than ever before.

Barriers to Prevention and Treatment

Various behavioral factors influence the control of diabetes. Many individuals do not eat properly and do not get enough physical activity. These problems have become key factors that have changed in our society. In order to meet a deadline, fast food of higher fat and calorie content is frequently chosen, which contributes to the obesity problem leading to diabetes. Individuals are unaware of the symptoms and risk factors of diabetes and may go for a long period of time with increased blood sugar.

Conclusions

Research studies in the United States and abroad have found that lifestyle changes can prevent or delay the onset of type 2 diabetes among high-risk adults. Lifestyle interventions include diet and moderate intensity physical activity (such as walking for 2 ½ hours each week). For both sexes and all age, racial and ethnic groups, the development of diabetes was reduced 40% to 60% during these studies lasting 3 to 6 years.

Better nutrition, physical activity, control of blood glucose levels, and access to services can delay the progression of diabetes. In fact, recent findings show that modest, consistent physical activity and a healthy diet can cut a person's risk for developing type 2 diabetes by nearly 60%.

Is It Smallpox?

CDC Experience With an Algorithm to Evaluate Rash Illnesses

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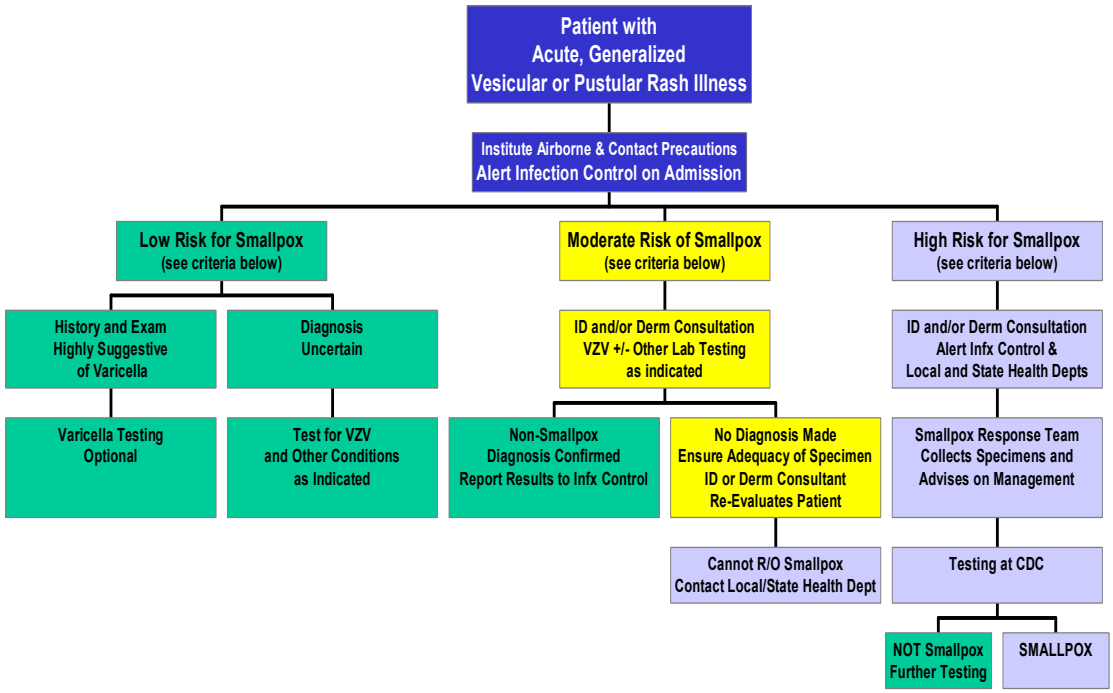
During this past summer, the Indiana State Department of Health (ISDH) mailed to all local health departments copies of a poster, Evaluating Patients for Smallpox, designed to differentiate smallpox from other rash illnesses. In the center of the poster, developed by the Centers for Disease Control and Prevention (CDC), is an algorithm (Figure 1), which helps assign high, moderate, or low risk of smallpox for a patient with a rash presentation. Now CDC has reported on phone consultations regarding suspected smallpox cases.

Figure 1. CDC Algorithm for Evaluating Rash Illness



The report, given in September at the annual Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), featured data from 16 phone consultations from 12 states and one city. These requests allowed CDC staff to test the clinical algorithm. It helps health care providers evaluate a patient presenting with an acute, generalized vesicular or pustular rash illness. The earliest step in the evaluation is to institute airborne and contact precautions in order to protect those interacting with the patient from becoming infected. Then, through use of major and minor criteria for a diagnosis of smallpox (Table 1), the clinician can assign the patient to a low, moderate or high risk of smallpox.

Table l. Smallpox Criteria for Use with CDC Algorithm: Evaluating Patients for Smallpox

Major	Minor
Febrile prodrome Classic lesions Lesions have same stage of development	Centrifugal distribution of rash 1st appearances - oral, face, forearm Patient toxic/moribund Slow evolution of rash Rash on palms and soles

None of the patients from the study was assigned high-risk status, 19 percent were moderate risk, and 81 percent were judged to be low risk. Patients included both adults and youngsters. The most common diagnosis was varicella (i.e., chicken pox) with two-thirds of the moderate risk patients and almost half of the low risk patients ultimately having this diagnosis. Other diagnoses included erythema multiforme, disseminated herpes zoster, insect bites or allergic dermatitis.

CDC officials at the ICAAC meeting were pleased with these first efforts showing that the algorithm aids in differential diagnosis for rash illnesses, thus enhancing good medicine by better identifying smallpox look-alike disease. Furthermore, the algorithm helps clinicians make appropriate use of CDC reference laboratory resources. At present all clinical specimens from patients with high risk of smallpox should be analyzed only at CDC. The guidance provided by the algorithm helps assure that only those specimens from patients truly at high risk will be forwarded for this laboratory work-up.

The ISDH labs should be notified about any specimen requiring smallpox analysis. The ISDH staff will provide information to clinicians about techniques for securing the appropriate specimen. They will also provide detailed information about handling and packaging for subsequent transport to the ISDH labs. ISDH staff will alert CDC and will forward the specimen to the CDC laboratory immediately.

There are some limitations to the use of the algorithm. First, the rash evaluation is at the vesicular or pustular stages of lesion evolution. Patients presenting with earlier development of smallpox rash are infectious. Particularly important is the recognition that the earliest rash stages include lesions in the oral mucosa when the virus is present in the saliva in high numbers. Persons in face-to-face contact with such a patient would be exposed. Second, patients with the flat or hemorrhagic variations of smallpox may never progress to the classic rash stage. Therefore, there are efforts underway to aid clinicians in reviewing their general rash protocols to accommodate these possibilities and to assure protection of staff as well as of other patients that might be present in a waiting area.

The ISDH mailing of the poster included extra copies to be shared with hospitals in the local health department's jurisdiction. One of the CDC staff members stated at the ICAAC meeting that CDC is depending on public health to help alert health care providers about the importance of careful evaluation of patients presenting with rash illnesses. For additional copies of the poster see the CDC website at **http://www.bt.cdc.gov/agent/smallpox/diagnosis/index.asp**. This site also contains a wealth of other information about the disease.

"**Outbreak Spotlight**" will be a regularly appearing feature in the ***Indiana Epidemiology Newsletter*** to illustrate the importance of various aspects of outbreak investigation. The event described below highlights the importance of collaboration between school nurses, community health care providers, and local health departments.

OUTBREAK SPOTLIGHT….

'Tis the Season: Respiratory Illness in Hamilton and Marion Counties, 2001

Background

On October 30, 2002 a representative of the Hamilton County Health Department (HCHD) notified the Indiana State Department of Health (ISDH) that a nurse at a local junior high school had reported nine cases of pneumonia, some of which were confirmed by chest x-ray. That same day, the HCHD received calls from school nurses at a local high school and an elementary school reporting increased incidence of respiratory illness. All schools are located in the same town.

Epidemiologic Investigation

The ISDH and the HCHD conducted a collaborative investigation of this outbreak. Representatives from both agencies conducted active surveillance with school nurses in the area to determine the scope of the illness. The ISDH Laboratories issued influenza collection kits to schools reporting illness. School nurses were encouraged to report cases of pneumonia-like illness or extended absences due to illness to the HCHD. The ISDH developed a questionnaire that documented illness and exposure history, and forwarded it to HCHD. The ISDH and HCHD conducted case interviews via telephone. As the numbers of cases reported increased, schools were prompted to issue letters to parents regarding the outbreak, and to encourage parents to seek medical attention and laboratory testing for students who were ill. At this time, it was also reported that students were coming to school ill so as not to miss midterm examinations and so as not to disrupt their perfect attendance records, since some schools allowed students to waive final exams in lieu of perfect attendance. Many students interviewed reported having contact with someone else ill prior to their own illness.

As of November 9, at least 24 cases of pneumonia had been identified among students attending three schools in Carmel. Although no consistent etiologic agent had been identified by this time, two students had tested positive for *Mycoplasma pneumoniae* via culture or serology. The HCHD forwarded a list of private health care providers in Hamilton and northern Marion counties to the ISDH, and the ISDH issued a letter to these providers encouraging them to participate in case surveillance and obtain laboratory testing on cases. Nurses at community health care clinics and urgent clinics were also notified. The ISDH also notified Dr. Matt Moore, epidemiology intelligence service officer at the Centers for Disease Control and Prevention (CDC), of the outbreak.

By November 15, at least one laboratory confirmed case of *Mycoplasma pneumoniae* had been reported to the Marion County Health Department (MCHD) by an emergency room physician in Indianapolis. The ISDH forwarded copies of the provider letter to the MCHD, all hospitals in northern Marion County, and to all school nurses in the Carmel school system. The ISDH also alerted local health departments in surrounding counties to initiate case surveillance. HCHD alerted school nurses in other districts throughout Hamilton County about the outbreak and encouraged case reporting to HCHD.

During the week of November 26, five cases of possible pertussis had also been reported to the HCHD, and four laboratory confirmed cases of *Mycoplasma pneumoniae* had been identified. On November 30, the ISDH issued a second letter to health care providers updating the situation and encouraging providers to consider mycoplasmal illness and pertussis in the differential diagnosis of respiratory illness cases. Recommended pertussis control measures and laboratory testing methods were also included with the letter. Schools distributed pertussis information via letters to parents.

The number of respiratory illness cases reported sharply declined after the December holiday break. However, the HCHD continued to receive reports of respiratory illness in students throughout January and February, 2002. Case surveillance was maintained through March, 2002. Since no cases were reported during that month, the ISDH suspended active case surveillance on March 31, 2002.

The ISDH Epidemiology Resource Center (ERC) analyzed the completed questionnaires. A case was defined as any previously healthy person who became ill with pneumonia or pulmonary congestion and one other sign of respiratory illness (e.g. cough or fever). Any person who was ill for any other reason or who did not have pneumonia or pulmonary congestion and one other sign of respiratory illness was not considered as a case. A confirmed case of illness was defined meeting the above clinical criteria and having laboratory evidence of a particular etiologic agent or having an epidemiological link to a confirmed case.

Two hundred residents of Hamilton and Marion counties were reported ill. Thirty residents did not respond to telephone calls for interview, and twelve did not meet the case definition. The remaining 158 residents met the case definition. Signs and symptoms reported by the 158 cases included fever (98%; median: 102.5°F, range: 99.0°F to 106.0°F), pneumonia (96%; 89 cases confirmed by chest x-ray), dry cough (72%), chills (72%), pulmonary congestion (66%), body aches (63%), productive cough (56%), sore throat (53%), and nasal congestion (51%). Other signs and symptoms reported included headache, fatigue, nausea, anorexia, vomiting, diarrhea, and rash. The median duration of illness was not determined, since many cases were symptomatic at the time of interview. All cases sought medical attention, and at least 17 cases were hospitalized overnight. The median incubation period of illness was undetermined.

Ten cases were confirmed positive for *Mycoplasma pneumoniae* (see "Laboratory Results"). Two additional cases were epidemiologically linked, totaling twelve confirmed cases. Signs and symptoms reported by the twelve confirmed cases included fever (100%; median: 102.4°F, range: 101.0°F to 104.0°F), chills (90%), pneumonia (83%; 8 cases confirmed by chest x-ray), dry cough (75%), pulmonary congestion (58%), nasal congestion (58%), sore throat (50%), and body aches (50%). Other signs and symptoms reported included headache, fatigue, anorexia, nausea, vomiting and rash.

Laboratory Results

Seventeen cases submitted specimens to private health care providers for laboratory analysis. Ten cases were confirmed positive for *Mycoplasma pneumoniae* by culture or IgM serology. One case was confirmed positive for *Candida albicans,* and another confirmed positive for *Streptococcus pyogenes.* Four cases tested negative for any pathogen, and one specimen was unsatisfactory for testing. In addition, one other resident with respiratory illness during this time was culture positive for *Bordetella pertussis.*

In addition, approximately 15 cases submitted nasopharyngeal swabs to the ISDH Laboratories for analysis. Specimens were tested for the presence of adenovirus, influenza viruses types A and B, parainfluenza viruses types 1, 2, and 3, and respiratory syncytial virus. Two specimens submitted were positive for influenza A. All other specimens were negative for all viral agents.

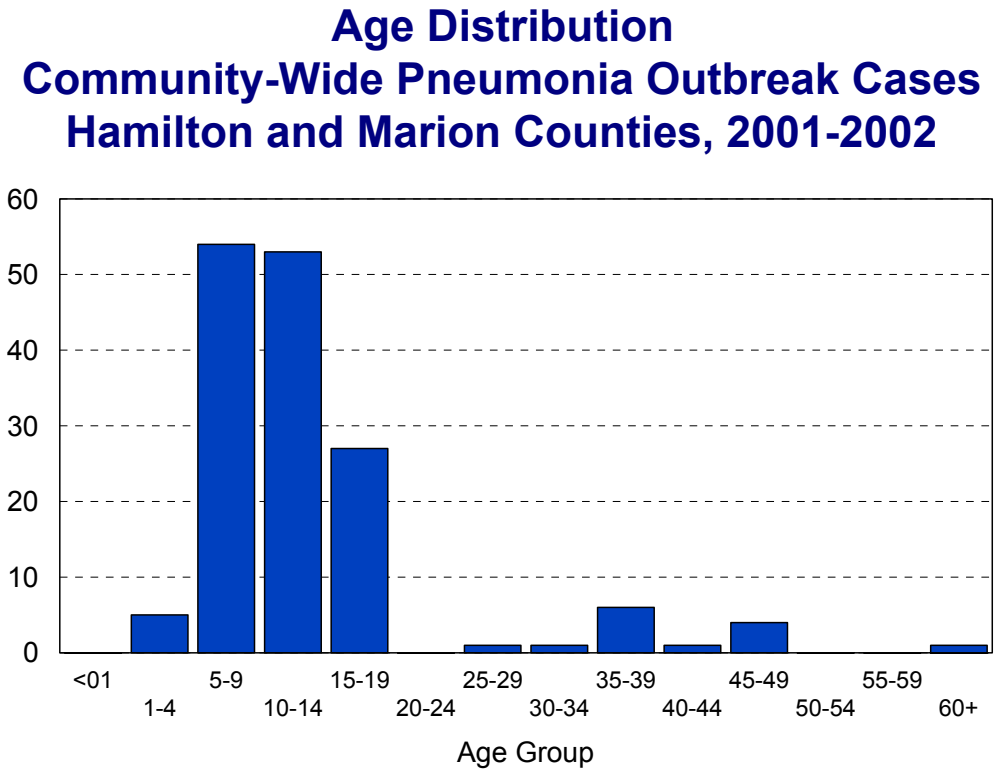
Conclusions

This investigation confirms that a community-wide outbreak of respiratory illness occurred among residents of Hamilton and Marion counties from August, 2001 to February, 2002. Most cases occurred in school-age children. However, since surveillance efforts were focused in the schools and children are more likely to obtain medical attention than adults, the number of cases among adults was probably underreported. Based on the clinical symptoms, the duration of the outbreak, incidence of cases among school-aged children and the laboratory results, *Mycoplasma pneumoniae* was most likely the cause of the outbreak. Twelve confirmed cases of this infection were identified, and illness descriptions were very similar between probable cases and confirmed cases (see "Epidemiologic Investigation").

M. pneumoniae is an extremely small bacterium that commonly causes acute respiratory tract infections, characterized by fever, cough, sore throat, tracheobronchitis and pneumonia, symptoms commonly reported by cases in this outbreak. Approximately 10% of children with pneumonia also develop a rash[4], which was reported by three cases in this outbreak.

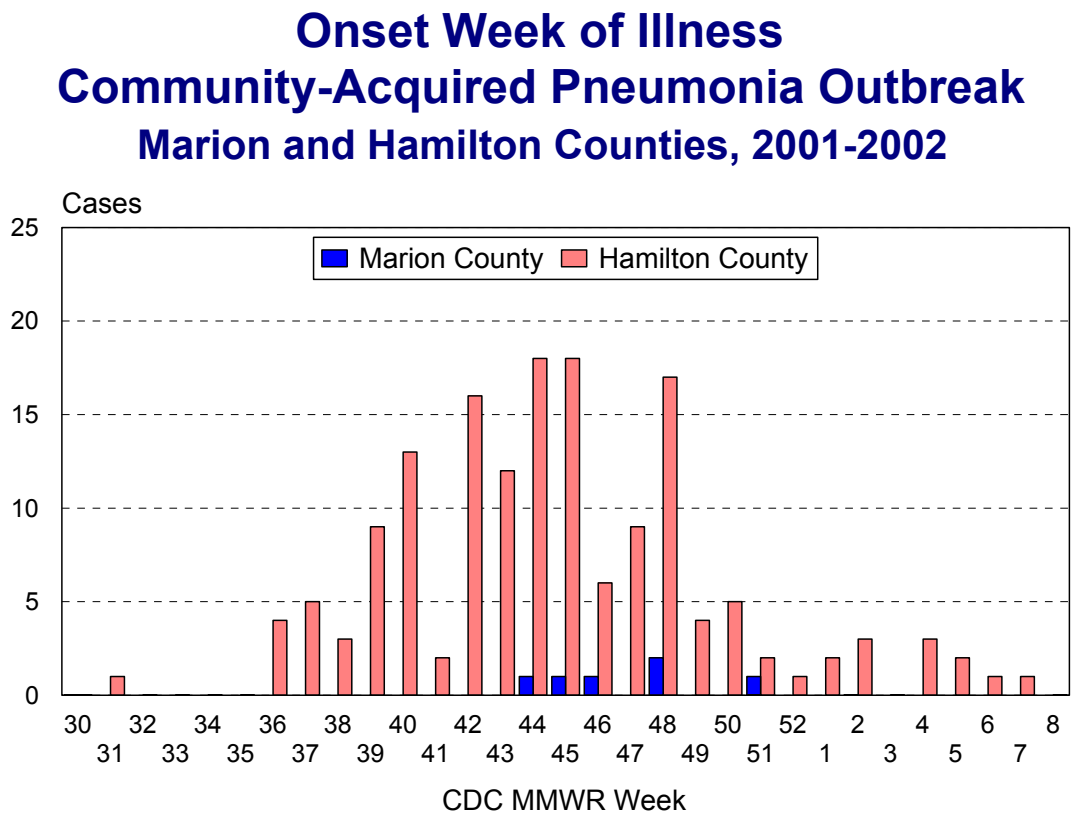
An estimated 2 million cases of *M. pneumoniae* and 100,000 related hospitalizations occur annually in the U.S[1]. Sporadic infections can occur throughout the year, while outbreaks are most common during the fall, typically peaking in 4-7 year cycles[3]. Outbreaks can occur in closed settings or as community-wide epidemics, which may not be immediately identified[2]. The highest incidence rates of pneumonia caused by *M. pneumoniae* occur among children ages 5-9 years, followed by children ages 10-14 years[3], a trend reflected in this outbreak (see Figure 1). *M. pneumoniae* may account for 15-20% of community-acquired lower respiratory infections in adults as well[3].

Figure 1.



M. pneumoniae is a human pathogen that is transmitted person-to-person by contact with respiratory droplets. Eighty-eight of the 158 cases (56%) in this outbreak could identify someone ill they had been in contact with prior to their own illness. The epidemic curve (see Figure 2) depicting the onset dates of cases indicates that this outbreak was most likely transmitted from a continuous source. In continuous source outbreaks, including person-to-person, cases become ill at different times from multiple exposures. The number of cases can rise gradually or sharply, plateau, then gradually decline. The incubation period of *M. pneumoniae* is 1-4 weeks[1,4], which probably contributed to the duration of the outbreak and limitation of control measures[3].

Figure 2.



A few of the cases may have been attributed to other agents (see "Laboratory Results"). One Hamilton County resident was confirmed positive for *Bordetella pertussis*, and 14 additional cases, all of which were epi-linked to the culture positive case, were identified between October and December. Since *M. pneumoniae* may also cause a pertussis-like illness[4], it is unclear what role pertussis played in this outbreak. One case was confirmed positive for *Candida albicans,* one confirmed positive for *Streptococcus pyogenes,* and two cultured positive for influenza A. Four cases tested negative for any pathogen. However, culture of *M. pneumoniae* requires 7-21 days to grow on special media and is isolated in only 40-90% of cases[4], so negative results for this organism must be interpreted with caution.

Investigation of outbreaks of acute respiratory illness is important to determine the source, appropriate treatment of infected persons, and appropriate control measures. Many different etiologic agents may cause acute respiratory illness, and identification depends on the clinical syndrome, the population affected, and the incubation period. These factors may suggest a particular agent and help guide laboratory testing and subsequent control measures, including antimicrobial therapy[2]. The ISDH can assist local health departments with investigations of acute respiratory illness. The ISDH wishes to commend the outstanding efforts of the health departments of Hamilton and Marion counties, private health care providers, and all of the school nurses and school staff who participated in this investigation and related surveillance activities. Without their cooperation, this investigation could not have been performed.

In general, most outbreaks of *M. pneumoniae* may be controlled by strictly adhering to the following practices:

1. Thoroughly wash hands with soap and water after coughing, sneezing, using facial tissue and caring for someone ill.
2. Those ill should avoid group settings, including school and work. One of the possible contributing factors in the above outbreak was the fact that students attended school while ill to maintain perfect attendance and/or not miss exams. Policies regarding waiving exams in lieu of perfect attendance should be reconsidered.
3. Those ill should seek medical attention if respiratory illness does not resolve within a week or if accompanied by shortness of breath, wheezing, or other severe respiratory symptoms. While antimicrobials are useless in treating viral infections, bacterial infections often require appropriate antimicrobial therapy to improve. Macrolides and tetracyclines are the drugs of choice for treating *M. pneumoniae* infection[2].
4. Health care providers should consider *M. pneumoniae* in patients with acute respiratory illnesses, especially those that do not respond to beta-lactam antibiotics[2] or do not improve within a week.

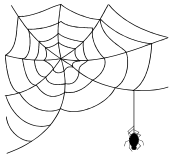
References:

1. *Mycoplasma pneumoniae.* December, 2000. Centers for Disease Control and Prevention website, http://www.cdc.gov/dbmd/diseaseinfo/mycoplasmapneum_t.htm

2. Outbreak of Community-Acquired Pneumonia Caused by *Mycoplasma pneumoniae*—Colorado, 2000. Centers for Disease Control and Prevention. *MMWR,* March 30, 2001 / 50(12);227-230.

3. Outbreaks of *Mycoplasma pneumoniae* Respiratory Infection—Ohio, Texas, and New York, 1993. Centers for Disease Control and Prevention. *MMWR,* December 10, 1993 / 42(48)931,937-939.

4. American Academy of Pediatrics. *Mycoplasma pneumoniae* Infections. In: Pickering LK, ed. *2000 Red Book: Report of the Committee on Infectious Diseases.* 25th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2000: 408-410.



Wonderful Wide Web Sites

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.statehealth.IN.gov (under Data and Statistics)

Indiana Cancer Incidence Report (1990, 95,96)

Indiana Cancer Mortality Report (1990-94, 1992-96)

Indiana Health Behavior Risk Factors (BRFSS) (1995-96, 97, 98, 99, 2000, 2001)

Indiana Hospital Consumer Guide (1996)

Indiana Marriage Report (1995, 97, 2000)

Indiana Maternal & Child Health Outcomes & Performance Measures (1988-97, 1989-98, 1990-99, 1991-2000)

Indiana HIV/STD Quarterly Reports

Indiana Mortality Report (1999, 2000)

Indiana Natality Report (1995, 96, 97, 2000)

Indiana Induced Termination of Pregnancy Report (2000)

Indiana Combined Natality/Induced Termination of Pregnancy/Marriage Report (1998, 1999)

Indiana Infectious Diseases Report (1996, 97, 98, 99, 2000) (formerly Indiana Report of Diseases of Public Health Interest)

Public, Hospital Discharge Data (1999)

HIV Disease Summary

Information as of October 31, 2002 (based on 2000 population of 6,080,485)

HIV - without AIDS to date:

440	New HIV cases from November 2001 thru October 2002	12-month incidence	7.24 cases/100,000
3,643	Total HIV-positive, alive and without AIDS on October 31, 2002	Point prevalence	59.92 cases/100,000

AIDS cases to date:

469	New AIDS cases November 2001 thru October 2002	12-month incidence	7.71 cases/100,000
3,181	Total AIDS cases, alive on October 31, 2002	Point prevalence	52.32 cases/100,000
6,866	Total AIDS cases, cumulative (alive and dead)		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in October *MMWR* Week 40-43		Cumulative Cases Reported January - October *MMWR* Weeks 1-43	
	2001	2002	2001	2002
Campylobacteriosis	42	25	396	389
Chlamydia	1,291	1,407	13,126	14,271
E. coli O157:H7	6	11	73	55
Hepatitis A	11	2	87	41
Hepatitis B	5	4	43	43
Invasive Drug Resistant *S. pneumoniae* (DRSP)	9	4	153	136
Gonorrhea	681	652	5,762	6,146
Legionellosis	2	1	17	17
Lyme Disease	2	0	22	18
Measles	0	0	4	2
Meningococcal, invasive	3	5	34	29
Pertussis	15	12	78	103
Rocky Mountain Spotted Fever	0	0	1	2
Salmonellosis	40	29	446	399
Shigellosis	18	9	185	85
Syphilis (Primary and Secondary)	14	8	136	58
Tuberculosis	10	19	84	106
Animal Rabies	0	1 (Bat)	2 (Bats)	31 (30 Bats 1 Skunk)

For information on reporting of communicable diseases in Indiana, call the *ISDH Communicable Disease Division* at (317) 233-7665.

Indiana *Epidemiology* Newsletter

The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community. We welcome input from our readers. Please direct questions and comments to Cheryl Thomas by calling (317) 233-7406 or e-mail at cthomas@isdh.state.in.us